AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph on page 11, lines 21-32 with the following amended paragraph:

In some versions of the second embodiment of the invention, the magnetic sensor may be placed on a fixed portion of a micro machined optical element. FIGS. **5A-5E** depict several alternative versions of this embodiment. In these versions, a magnetic structure ~~material is~~ characterized by a permanent magnetic moment is disposed on a moveable portion and the magnetic sensor and its associated leads are disposed on a nearby fixed portion. The magnetic ~~material~~ structure may produce a magnetic flux that passes through a magnetoresistive sensor, Hall effect sensor or coil wherein the flux changes as the position of the magnetic material changes with respect to the sensor. Changes in flux through the sensor may cause changes an electrical property of the sensor, e.g. electrical resistance, Hall voltage or inductance. An advantage of this configuration is that an electrical connection to the moveable portion is not required. This greatly simplifies the manufacture of the apparatus and improves the robustness of its operation.

Please replace the paragraph on page 12 lines 1-11 with the following amended paragraph:

FIG. **5A** depicts a plan view of an apparatus **500** according to another alternative versions of the second embodiment of the invention. The apparatus **500** generally comprises a micro machined optical element having a fixed portion in the form of a substrate **502** and a moveable portion in the form of a flap **506**. The flap is movable, e.g. rotatable with respect to an axis **503**. The flap may include a light-deflecting element **507** One or more magnetic sensors **504A**, **504B** are disposed on the substrate **502** proximate the flap **506**. One or more magnetic structures ~~elements~~ **508A**, **508B** are disposed on the flap **506** near the sides thereof proximate the sensors **504A**, **504B**. The sensors **504A**, **504B** may be connected to detectors **501A**, **501B** through leads **505A**, **505B**, **505C**, **505D**. In the embodiment shown in FIG. **5A** the sensors **504A**, **504B** and the magnetic structures ~~materials~~ **508A, 508B** are oriented substantially parallel to each other and substantially perpendicular to the rotation axis **503**.

Please replace the paragraph on page 12, lines 12-24 with the following amended paragraph:

The magnetic structures ~~elements~~ **508A**, **508B** may be magnetically active materials having, e.g. a fixed magnetic moment, i.e., they may be permanent magnets. Magnetically active materials may include Nickel, Nickel-Iron, Iron-Cobalt, Aluminum-Nickel-Cobalt, Neodymium-Iron-Boron, etc., and, may be deposited in a uniform or stepped pattern. The magnetic structures ~~elements~~ **508A**, **508B** may alternatively include one or more coils that carry electric current to provide a magnetic moment. Each magnetic structure ~~element~~ **508A**, **508B** may be characterized by a magnetic moment having a direction indicated by the arrows **509A**, **509B**. In the embodiment depicted in FIG. **5B** the magnetic moments of the magnetic structures ~~elements~~ **508A**, **508B** are oriented substantially perpendicular to the axis **503**. As the flap **506** rotates about the axis **503** the change in the relative position and/or orientation of the magnetic field produced by the magnetic structures ~~elements~~ **508A**, **508B** with respect to the sensors **504A**, **504B** causes a change in the magnetic flux passing through the sensors **504A**, **504B**. The change in flux causes a change in an electrical property of one or more of the sensors **504A**, **504B**.

Please replace the paragraph beginning on page 12 line 25 and ending on page 13, line 2 with the following amended paragraph:

In a preferred embodiment, the sensors **504A**, **504B** may have a C-shape that includes a gap. The sensors **504A**, **505B** "wrap around" the magnetic elements **508A**, **508B**. As the position of the flap **506** changes with respect to the substrate **502** the amount of magnetic flux produced by the magnetic structures ~~elements~~ **508A**, **508B** that is intercepted by the sensors **504A**, **504B** changes. Where the sensors **504A**, **504B** are magnetoresistive sensors, the change in intercepted flux produces a change in one or more sense signals detected at the detectors **501A**, **501B**. In the particular version of the second embodiment shown in FIG. **5A**,the magnetic flux is a maximum when the flap **506** is substantially parallel to the substrate **502**. In this configuration, the magnetic structures ~~elements~~ **508A**, **508B** are disposed within the gaps in the sensors **504 A**, **504B**.

Please replace the paragraph on page 13, lines 3-16, with the following amended paragraph:

FIG. **5B** depicts a plan view of an apparatus **510** according to another alternative version of the second embodiment of the invention. The apparatus **510** is a variation on the apparatus **500** of FIG. **5A**. The apparatus **500** generally comprises a micro machined optical element having a fixed portion in the form of a substrate **512** and a moveable portion in the form of a flap **516**. A light-deflecting element **517** may be disposed on the flap **516**. The flap **516** is movable, e.g. rotatable with respect to an axis **513**. A magnetic sensor **514** may be disposed on the substrate **512** proximate an end of the flap **516**. A magnetic structure ~~element~~ **518** may be disposed on the flap **516** proximate the sensor **514**. The magnetic moment of the magnetic structure ~~element~~ **518** may be oriented substantially parallel to the axis **513**, as indicated by the arrow **519**. As in FIG. **5A** the magnetic sensor **514** may be in the form of a magnetoresistive element having a C-shape with a gap. In the particular version of the second embodiment shown in FIG. **5A** the magnetic element lies within the gap when the gap when the flap **516** is substantially parallel to the substrate **512**. The magnetic sensor **514** may be coupled to a detector **511**, e.g., by leads **515A**, **515B**.

Please replace the paragraph on page 14, lines 12-22 with the following amended paragraph:

One or more magnetic sensors **524** may be disposed on the top chip **525** proximate the flap **526**. Although FIG. **5C** shows the sensor **524** disposed on a surface of the top chip **525**, a sensor **524'** may alternatively be disposed on the sidewall **527**. The sensors **524**, **524'** may be coupled to a detector **521**, e.g., via leads **529A**, **529B**. A magnetic structure ~~element~~ **528**[[.]], such as a magnetic material, may be disposed on the flap **526** to provide a sense magnetic field that is detected by the sensors **524**, **524'**. Alternatively one or more of the sensors **524**, **524'** may be disposed on the flap **526** and the magnetic material may be disposed on the substrate **522**, the top chip **525** or the sidewalls **527**. It need be stated that the top chip associated with each micro machined optical element may also be comprised of two high-aspect-ratio deep vertical walls separated by an air gap.

Please replace the paragraph beginning on page 14, line 23 and ending on page 15, line 5 with the following amended paragraph:

Several orientations of the sensors and magnetic elements are possible. Two particular configurations are depicted in FIG. **5D** and FIG. **5E**. FIG. **5D** depicts a plan view of an apparatus **530** according to another alternative versions of the second embodiment of the invention. The apparatus **530** generally comprises a micro machined optical element having fixed portions in the form of a substrate **532** and a top chip **535**. The micro machined optical element includes a moveable portion in the form of a flap **536**. One or more magnetic sensors **534A**, **534B** are disposed on the top chip **535** proximate the flap **536**. The sensors **534A**, **534B** may be coupled to a detector **531**, e.g., via leads **539A**, **539B**. The sensors **534A**, **534B** may be in the form of serpentine coils of magnetic material. The serpentine shape allows a greater length for the sensors, which increases their sensitivity to changes in magnetic flux. One or more magnetic elements **538A**, **538B** are disposed on the flap **536** near the sides thereof. The magnetic elements **538A**, **538B** may be positioned such that they are proximate the sensors **534A**, **534B** when the flap **536** is clamped against the top chip **535**. In this position, the magnetic flux though the sensors **534A**, **534B** from the magnetic structures ~~elements~~ **538A**, **538B** may be maximized.

Please replace the paragraph beginning on page 14, line 23 and ending on page 15, line 5 with the following amended paragraph:

FIG. **5E** depicts a plan view of an apparatus **540** according to another alternative version of the second embodiment of the invention. The apparatus **540** generally comprises a micro machined optical element having fixed portions in the form of a substrate **542** and top chip **545**. The micro machined optical element may include a moveable portion in the form of a flap **546**. A magnetic sensor **544** may be disposed on the top chip **545** proximate the flap **546**. The magnetic sensor **544** may be coupled to a detector **541**, e.g. through leads **547A**, **547B**. The magnetic sensor **544** may be in the form of a serpentine pattern of magnetoresistive material having features in common with the serpentine patter described with respect to FIG. **5D**. One or more magnetic elements **548** may be disposed on the flap **516** proximate an end thereof. The magnetic structure ~~element~~ **548** may be positioned on the flap **546** such that it is proximate the magnetic sensor **544** when the flap is in an "on" position.